

# **REPORT OF ACTIVITIES OF THE DEPARTMENT OF WATER RESOURCES**

By

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## WATER CONDITIONS

As of December 1st, Water Year 2008 statewide hydrologic conditions were as follows: precipitation, 65 percent of average to date; runoff, 50 percent of average to date; and reservoir storage, 85 percent of average for the date. In general, November was a dry month for California, except for the far north coast, which had near average precipitation. At the end of the month, an unusually strong subtropical low brought locally heavy rains to the southern portion of the State. Despite parts of Southern California receiving significantly above average rainfall during November, drought conditions persist across the region.

Temperatures were generally above average during November, except for the coastal regions. During the first week of December, several storms moved across California, bringing significant rain and snow to the Sierra. These storms increased soil moisture of the State's watersheds, but provided little runoff for the major water supply reservoirs.

On December 10<sup>th</sup>, the Northern Sierra 8-Station Index had a seasonal total of 7.1", which is about 59 percent of the seasonal average to date and about 14 percent of average for an entire Water Year (50.0"). The Water Year 2007 October through November seasonal total of 4.6" is the 21st driest year out of 89 years of record.

Sacramento River unimpaired runoff observed through November 30, 2007 was about 0.8 million acre-feet (MAF), which is about 60 percent of average. (On November 30, 2006, the observed Sacramento River unimpaired runoff through that date was about 1.1 MAF or about 76 percent of average.) The median forecasts of the Sacramento and San Joaquin Valley Water Year Type indexes are "Dry" and "Critical," respectively.

Selected Cities Precipitation Accumulation as of 11/30/2007 (National Weather Service Water Year: July through June)					
	Jul 1 to Date 2007 - 2008 (in inches)	% Avg	Jul 1 to Date 2006 - 2007 (in inches)	% Avg	% Avg Jul 1 to Jun 30 2007 - 2008
Eureka	8.90	98	8.12	89	23
Redding	4.76	71	4.14	62	14
Sacramento	1.97	58	1.28	38	10
San Francisco	2.71	74	1.97	54	13
Fresno	0.33	17	0.31	16	2
Bakersfield	0.47	44	0.31	29	7
Los Angeles	1.47	83	0.50	28	9
San Diego	0.46	26	0.96	55	4

Key Reservoir Storage (1,000 AF) as of 11/30/2007								
Reservoir	River	Storage	Avg Storage	% Average	Capacity	% Capacity	Flood Control Encroachment	Total Space Available
Trinity Lake	Trinity	1,365	1,611	85	2,448	56	---	1,083
Shasta Lake	Sacramento	1,732	2,774	62	4,552	38	-1,562	2,820
Lake Oroville	Feather	1,286	2,188	59	3,538	36	-1,877	2,252
New Bullards Bar Res	Yuba	549	523	105	966	57	-247	417
Folsom Lake	American	241	468	51	977	25	-336	736
New Melones Res	Stanislaus	1,435	1,316	109	2,420	59	-535	985
Don Pedro Res	Tuolumne	1,223	1,309	93	2,030	60	-467	807
Lake McClure	Merced	268	450	60	1,025	26	-406	757
Millerton Lake	San Joaquin	159	215	74	520	31	-276	361
Pine Flat Res	Kings	198	373	53	1,000	20	-482	802
Isabella	Kern	108	151	71	568	19	-62	460
San Luis Res	(Offstream)	1,022	1,237	83	2,039	50	---	1,017

The latest National Weather Service Climate Prediction Center (CPC) 90-day long-range seasonal weather outlook (for December through February), issued November 15<sup>th</sup>, suggests above average precipitation for Northern California (including the Pacific Northwest) and below average for Central and Southern California. Temperatures are expected to be above average for much of southern and southeastern California and near average for the rest of the State. The latest CPC long-range weather outlook for December, issued November 30<sup>th</sup>, suggests above average temperatures for Central and Southern California, while Northern California is expected to have average temperatures. Average precipitation is expected for almost all California, except for the extreme north and southeast where slightly above average precipitation is expected.

The pattern of this year's long-range forecasts is influenced by the continuing development of moderate La Nina conditions (cooler than average sea-surface temperatures) across the tropical Pacific. Current conditions suggest that La Nina conditions may continue into next spring. La Nina events influence the position and strength of the jet stream over the Pacific Ocean, which in turn affects the winter precipitation, and temperature patterns across the United States and other locations in the world. La Nina conditions can favor a wetter than average Pacific Northwest and a drier than average American Southwest. California sits in the transition zone with the northern mountains of the State potentially wetter than average, and the Central Valley and Southern California potentially drier than average. In addition, during La Nina years, weather in Northern California can be highly variable, with both wet and dry scenarios possible. Southern California has a more consistent tendency toward dryness, suggesting that drought conditions are likely to persist in that region and the American Southwest.

## **LEEVE EVALUATIONS BRANCH**

The Levee Evaluations Branch was created to perform geotechnical levee evaluations on about 350 miles of urban levee. An urban levee is defined as protecting at least 10,000 people. The geotechnical levee evaluations will focus on the urban project levees in geographic areas of Reclamation District (RD) 17, Natomas, West Sacramento, Marysville, Woodland, Davis, Stockton, MA9, the American River, Sacramento, the Sutter Basin, and RD 784. This program will later expand to other areas within the Sacramento and San Joaquin Flood Control Projects with the Bond funding.

The purpose of these evaluations is to assist in developing a levee certification program based on geotechnical data, provide consistent formats for data (and associated data exchange), and provide an evaluation of the levee system based on geotechnical data. This evaluation will be conducted with the goal of providing 200 year level of protection in urban areas and the design profile level of protection in rural areas using the U.S. Army Corps of Engineers (Corps) under seepage criteria.

The following activities occurred during the past month:

1. Drilling is occurring in Sutter County, Stockton, Marysville, Natomas, and RD 17.
2. The Department of Water Resources (DWR) is currently working on all the urban areas now in varying degrees of effort.
3. The electromagnetic survey of the urban levees is mostly processed. Data for the processed areas has been reduced and provided to local stakeholders and the Corps.
4. A bathymetric survey of the urban areas of the Sacramento, San Joaquin, lower Calaveras, and lower American Rivers began on December 3, 2007. This survey will take approximately one to two weeks. Data generated from this survey will allow three dimensional visualizations of the ground surface beneath water and aid in the generation of cross-sections for analyses and identification of areas of scour. Some media coverage of this survey will occur.
5. A Request for Qualifications (RFQ) for two up to \$60 million contracts to perform mostly non-urban levee evaluations has been tentatively awarded to URS and Kleinfelder and Associates. The contracts are in the rate negotiation phase. These contracts are anticipated to be in effect around April 2008, pending negotiations and Department of General Services' (DGS) approval. Additional interviews of the remaining contractors for a quality assurance/quality control portion of the RFQ will occur in mid December 2007.
6. The West Sacramento Phase 1 Geotechnical Evaluation Report was completed in November 2007. This report identifies areas of concern with regarding seepage, stability, seismic risk, and erosion. The Levee Evaluations Branch is working closely with the City of West Sacramento and the Corps to review these issues.

7. The Marysville and RD 17 Phase 1 Geotechnical Evaluation reports will be issued in January or February, 2008.
8. The Sutter Phase 1 Geotechnical Data Report was issued in November 2007.
9. The Levee Evaluations Branch is assisting the Floodplain Mapping Office with evaluating rates and scope of services for their four Central Valley mapping contracts.

## **LEEVE REPAIRS BRANCH**

### **Critical Erosion Repairs Program**

#### **Sacramento River Flood Protection Critical Repair Sites**

DWR and the Corps recently completed joint reconnaissance boat surveys and analysis of critical erosion sites for 2007 under the Sacramento River Bank Protection Project. A total number of 17 sites have been selected for repairs in 2008-09. Also, under Water Resources Development Act of 2007, the Corps has been authorized to extend the originally approved 400,000 linear feet bank protection to 485,000 linear feet. A Draft Agreement is ready for signatures by The Reclamation Board and the Corps for this additional authorization

All DWR work on the 2005 and 2006 Ayres Critical Erosion Sites related to on-site environmental mitigation (including soil-rock mix and agricultural soil cover, plantings, in-stream woody materials (IWM), fascine bundles, pole cuttings, seeding, and erosion control fabrics) is near completion.

Negotiations with the land owners for the two Cache Creek setback sites are continuing and initiation of repair work depends upon success of the negotiations.

#### **San Joaquin River Flood Protection Critical Repair Sites**

DWR has completed a Site Prioritization Study for the San Joaquin Flood Protection Project and identified four areas of critical nature. Two of these areas have major seepage problems along two reaches on the San Joaquin River in the vicinity of RD 404, and Chowchilla Bypass in Lower San Joaquin Levee District. The other two critical sites are on Paradise Cut (LM 3.8) and Mormon Slough (LM 33.0). DWR has initiated initial planning for repairs in 2008-09 for these sites.

### **2006 Public Law (PL) 84-99 Rehabilitation Assistance Program**

All 57 Order 1 and 2 sites repair work has been done, except six newly identified sites in RD150. Initially, the Corps had selected 62 of the 133 Order 3, 4 and 5 sites for repairs. However, due to environmental restrictions related to endangered species and limited construction windows, only six of these sites will be constructed this year. For the remaining sites, flood fighting contingencies will be established and implemented as necessary. The Corps is lead agency for PL84-99 repairs and DWR is providing environmental permitting, rights-of-way and borrow materials for these sites.

## **MAINTENANCE SUPPORT BRANCH**

### **Tisdale Bypass Channel Rehabilitation Project**

Except for meeting environmental mitigation obligations, the Tisdale Bypass Sediment Removal Project is completed. The removal of sediment from the bypass and disposal in the spoil area was completed on October 26, 2007. DWR estimates that 1.7 million cubic yards were removed. Other work in the bypass (i.e., rock revetment along portions of the levee, removal of access ramps, and seeding) and at the spoil site were completed as of November 7<sup>th</sup>. The contractor also demobilized their equipment and field office by that date. Mitigation planting consisting of 85.5 acres of forested riparian wetland habitat will be performed under a separate contract in 2008.

### **Garmire Road Bridge Replacement**

This project will replace the existing bridge over Tisdale Weir with a new bridge in cooperation with Sutter County Department of Public Works. During major flood flows, debris accumulates against the piles reducing the flow capacity of the Tisdale Weir. Due to the wider spans of the new bridge, less debris will be caught by the piles, thereby increasing floodwater conveyance.

The project was advertised in October 2007, and the low bid was approximately \$7 million, which was less than the engineer's estimate of \$9.8 million. Contract negotiations are expected to be completed in January, 2008, and construction of the new bridge is anticipated to start in May 2008. The project should be completed by November, 2009.

### **Knights Landing Levee Maintenance Agreement**

Castle Properties, LLC has complied with the verbal commitments given to The Reclamation Board to grade and gravel a levee crown road, regrade landside levee slopes, remove encroaching vegetation, and grout rodent holes. These commitments were provided to the Board as part of the terms of an encroachment permit they received from The Reclamation Board. Knight's Landing Ridge Drainage District (KLRDD) has agreed to accept operations and maintenance responsibilities for the levee as proscribed by the Corps. The agreement has been reviewed and approved by the KLRDD Board of Directors and legal counsel and they have authorized the KLRDD General Manager to sign the agreement.

## **PROJECT DEVELOPMENT BRANCH**

### **PROJECTS AND STUDIES TO IMPROVE FLOOD PROTECTION FOR SACRAMENTO**

#### **Joint Federal Project at Folsom**

Progress on the Folsom Dam Modifications Project (also known as the Folsom Dam Joint Federal Project) continues at a blistering pace and the four sponsoring agencies, The Reclamation Board, Corps, U.S. Bureau of Reclamation, and the Sacramento Area Flood Control Agency continue to demonstrate an unprecedented willingness to overcome institutional differences to make this billion dollar flood protection and dam safety project become a reality on the ground. In particular:

- A contract has been awarded and initial excavation work is imminent on the spillway chute and stilling basin. A ground breaking ceremony to celebrate this accomplishment is scheduled for January with attendance by many State and Federal VIPs expected.
- Hydraulic design work using four physical and two numeric models is nearing completion including one physical model that was the largest ever created in Reclamation's Technical Service Center in Denver. This model has been featured by local news stations in Denver and Sacramento as an unprecedented engineering achievement.
- Design is well underway to develop a unique energy dissipation system using a state of the art step spillway together with more traditional baffle blocks.
- Three phases of geotechnical exploration and data collection both inside and outside the reservoir are nearing completion. These data characterize the condition of rock materials that will be blasted and excavated for the spillway, stilling basin, and approach channel.
- A detailed construction phasing analysis is nearing completion that allows the project partners to plan for and minimize schedule and construction risks at the high security Folsom Dam facility.

While there is an enormous amount of work left to accomplish, the project partners continue to work together to eliminate obstacles as fast as they arise. The project is on schedule for completion around the year 2017.

### **American River Common Features Project**

The American River Common Features Project continues to improve the levee system along the American and Sacramento Rivers in Sacramento. Current activities by key project elements are:

- Design for sealing the windows left at the locations of deep utility crossings or other major infrastructure in the 24 miles of slurry wall along the American River levees has been initiated. These repairs are commonly referred to as the WRDA 1996 Remaining Sites work.
- A construction contract for raising 4300 feet of levee in the Mayhew area and installing a closure structure on the Mayhew Drain has been awarded. This work was authorized by WRDA 1999.
- Design for raising and widening three levee sections at Jacob's Lane, Howe Avenue, and Highway 160 has been commenced. This work was authorized by WRDA 1999 and commonly referred to as the North Area Contracts work.
- The Natomas General Re-Evaluation Report has been expanded to include the greater Sacramento region and Pocket Area and has been re-named the Common Features GRR.

### **South Sacramento County Streams Project**

The South Sacramento County Streams Project will provide increased flood protection for the south area of Sacramento

- Construction along a segment of Morrison Creek has been completed this year.
- In the spring of 2008, construction will continue along a segment of Union house Creek.
- Design for future flood control features along Elder Creek, Florin Creek, and the remainder of Union House Creek has been initiated and will be completed next year.

## **PROJECTS AND STUDIES TO IMPROVE FLOOD PROTECTION FOR OTHER URBAN AREAS**

### **West Sacramento Project**

Geotechnical analysis for the repair of the two levee slips is being conducted. After analysis is completed, design and construction will follow.

### **West Sacramento Feasibility Study**

The Corps has decided that evaluation of future work to provide 200-year level of protection for the area will need to be done under a feasibility study. Agreement negotiations are currently underway with the Corps, State, and local agencies.



### **Yuba River Basin Project**

General re-evaluation of the Yuba River Basin Project continues. The goal is to complete the General Re-Evaluation Report to seek project re-authorization from Congress in 2009

- The Marysville Ring levee improvement is a separable element of the Yuba River Basin Project. Authorization to initiate design and construction simultaneously with the GRR is underway. If authorized, Marysville will be afforded a high level of protection significantly sooner than originally scheduled. The Corps proposes to award a contract for design in 2008 and expects execution of a Project Cooperation Agreement with The Reclamation Board to commence construction of the Ring Levee repairs in Fall 2008. Completion of the Ring Levee repairs could potentially be done in 2010.

### **Sutter County Feasibility Study:**

The Corps has stated that the cost to complete the Sutter County Feasibility Study has increased. Negotiations are underway with the Corps for scope, cost, and schedule.

## **OTHER SIGNIFICANT DEVELOPMENTS**

### **Hamilton City and Middle Creek Projects**

The Hamilton City and Middle Creek Projects have been recently authorized by Congress with the passage of the Water Resources Development Act of 2007. Federal appropriations have not yet been approved. The State is committed in assisting the locals in the development of these projects.

## **FLOOD PROJECT MODIFICATIONS AND PERMITS BRANCH**

### **State Federal Flood Control System Modifications Program, Early Implementation Projects (EIP)**

DWR is nearing completion of its review of the financial information and other supplemental materials for the four EIP projects that passed the initial eligibility review. Additionally, DWR is developing California Environmental Quality Act findings in accordance with our role as a responsible agency for the EIP bond funded projects, and has also completed developing templates of the proposed Funding Agreement that will be used to disburse funds, and the Operations and Maintenance (O&M) agreement that will ensure that the project is maintained in accordance with acceptable practices.

DWR forwarded the Funding and O&M Agreement templates to the applicant agencies on Monday, December 3, 2007 in order for them to become familiar with the requirements contained in the agreements. Additionally, the applicants were asked to evaluate their previously submitted financial information in terms of the assumptions regarding how funds would be administered, particularly in regards to cash flow. The development of the agreement templates was accomplished in coordination with the Department of General Services, and the terms and conditions included are in accordance with applicable laws and policies regarding State cost-shared projects.

DWR is currently holding follow-up meetings with the applicants to discuss the agreements and review any action(s) that may be needed in order for DWR to be able to make a final determination of eligibility for the EIP projects.

The four projects currently being reviewed are indicated below along with the estimated State cost share:

- Levee District No. 1 of Sutter County, Lower Feather River Setback Levee at Star Bend – Total cost: \$20.15 million, Preliminary State cost share: \$16.33 million.
- Reclamation District No. 2103, Bear River North Levee Rehabilitation Project - Total cost: \$14.7 million, Preliminary State cost share: \$7.35 million.
- Sacramento Area Flood Control Agency, Natomas Levee Improvement Program (NLIP) Early Start Program – Total NLIP cost: \$227 million; total cost of Natomas Cross Canal South Levee element of NLIP: \$73.4 million; Preliminary State cost share: \$49.0 million.
- Three Rivers Levee Improvement Authority, Feather River Setback Levee - Total cost: \$201.3 million, Preliminary State cost share: \$138.5 million.

#### **Grants for Non-Project Local Levee Urgent Repairs**

Three grants for urgent repairs on locally owned and maintained levees were awarded under the Governor's emergency declaration. These grant funds are to be matched on a 50/50 cost share basis by the local entities responsible for repairing the levees:

- Santa Barbara County – Santa Maria River Levee Repair – \$36,500 (estimated State share)
- Yolo County – Huff's Corner Site 1 Repair – \$90,000 (estimated State share)
- Glenn County – Hamilton City J Levee Repair – \$227,000 (estimated State share)

Work has been completed on the Santa Maria River Levee Repair and the Huff's Corner Site 1 Repair project. The Hamilton City J Levee Repair project is currently under construction, with work anticipated to be completed by December 31, 2007. DWR has executed grant agreements with each of the agencies, and Santa Barbara County has received funding for the Santa Maria project.